Key Concepts for the Economics of Conflict

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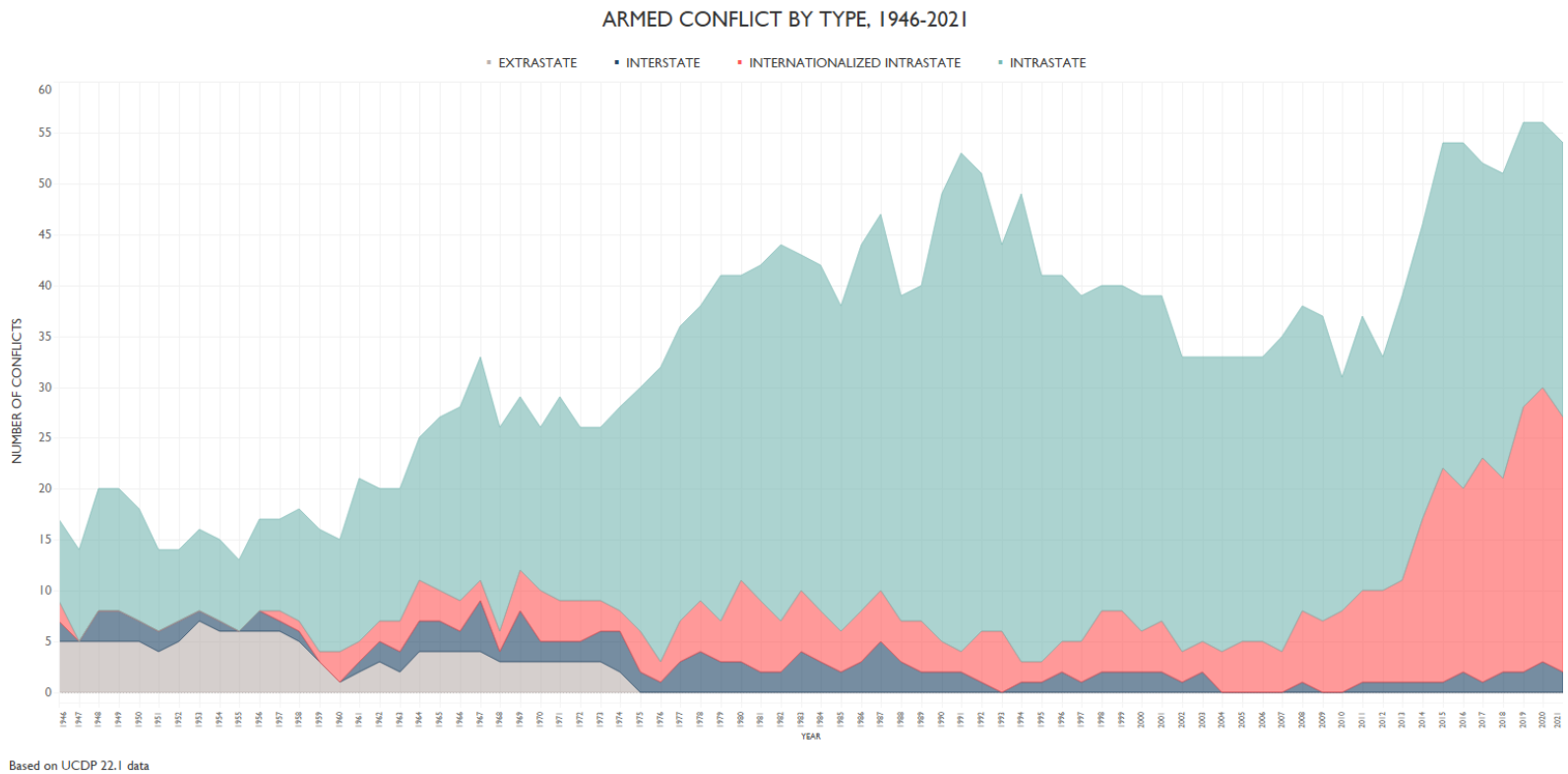
Introduction

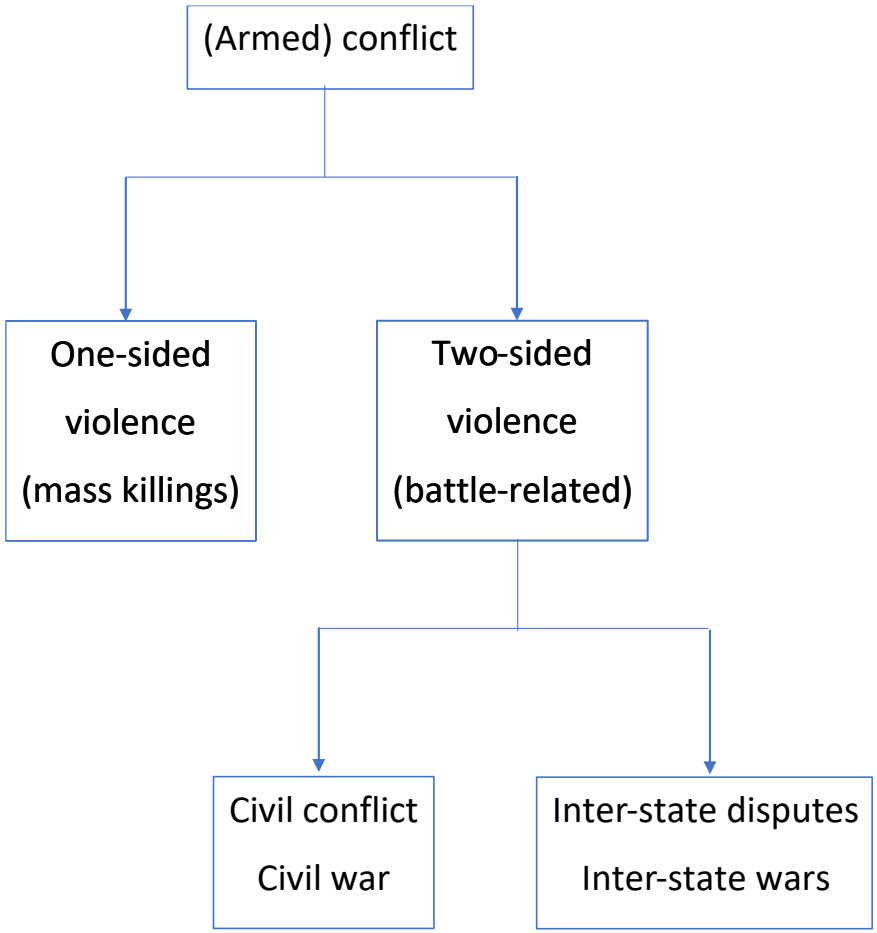
Why should we care about conflict?



Based on UCDP 22.1 data

Introduction

Types of conflict



Introduction

Fatalities

- To state upfront that the main focus will lie on civil conflict.
- Direct loss of human life: Narrowly defined battle-related deaths from 1946 to 2019 amount to about 11 million fatalities (Lacina and Gleditsch, 2005; updated with current numbers from the UCDP, 2021). One has to add to these numbers the human lives lost in one-sided conflict, where armed troops turn their weapons against defenseless civilians. Anderton and Brauer (2021) estimate 100 million mass atrocity-related deaths since 1900.
- Indirect effect of wars on human life: Works through diseases after the end of conflicts. Ghobarah, Huth and Russett (2003, APSR) find that the indirect fatalities are at least as large as direct casualties.

Introduction

Economic consequences

- Large economic costs. According to Mueller and Tobias (2016), an average drop in GDP of 18 percent after a civil war, and only a very slow economic recovery.
  - Abundant micro-evidence: E.g. Abadie and Gardeazabal (2003, AER) find that terrorism from 1955 to 1995 in the Basque country led to a 10% GDP gap with respect to synthetic control group.
- Also large-scale destruction of human capital (Shemyakina, 2011, JDE) and of (inter-group) social capital (Rohner, Thoenig and Zilibotti, 2013, JOEG; Bauer et al., 2016, JEP)

Introduction

War traps

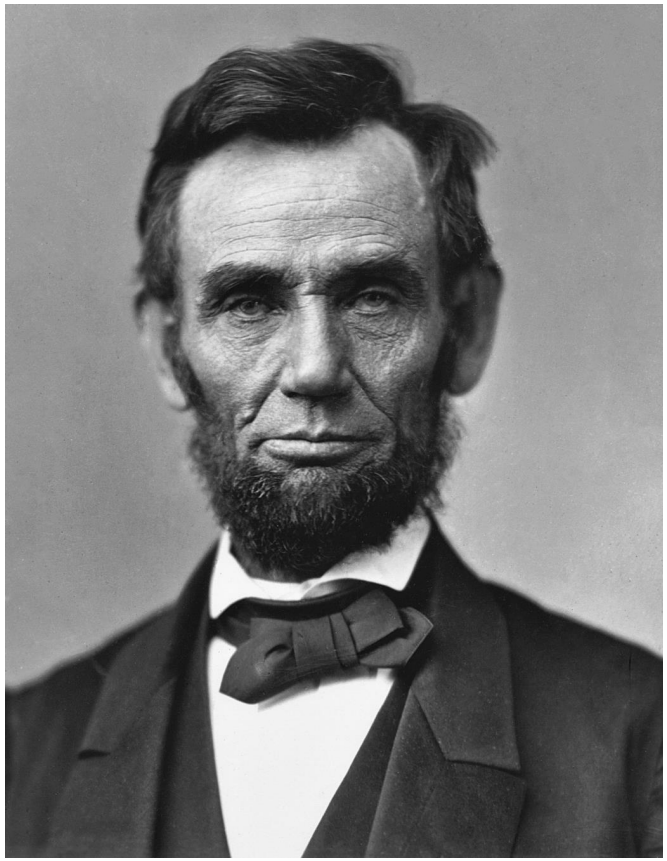
- Various war traps: Rohner and Thoenig, 2021, "The Elusive Peace Dividend of Development Policy: From War Traps to Macro Complementarities", *Annual Review of Economics*
- 68 percent of all civil conflict outbreaks in the second half of the 20th century took place in countries experiencing multiple wars.
- Several types of war traps that hold countries persistently back, both economically and politically.
  - Trust
  - Poverty
  - Education

Introduction

Potential for lasting change ...

"Those who shall have tasted actual freedom I believe can never be slaves, or quasi slaves again."

Abraham Lincoln (1863)



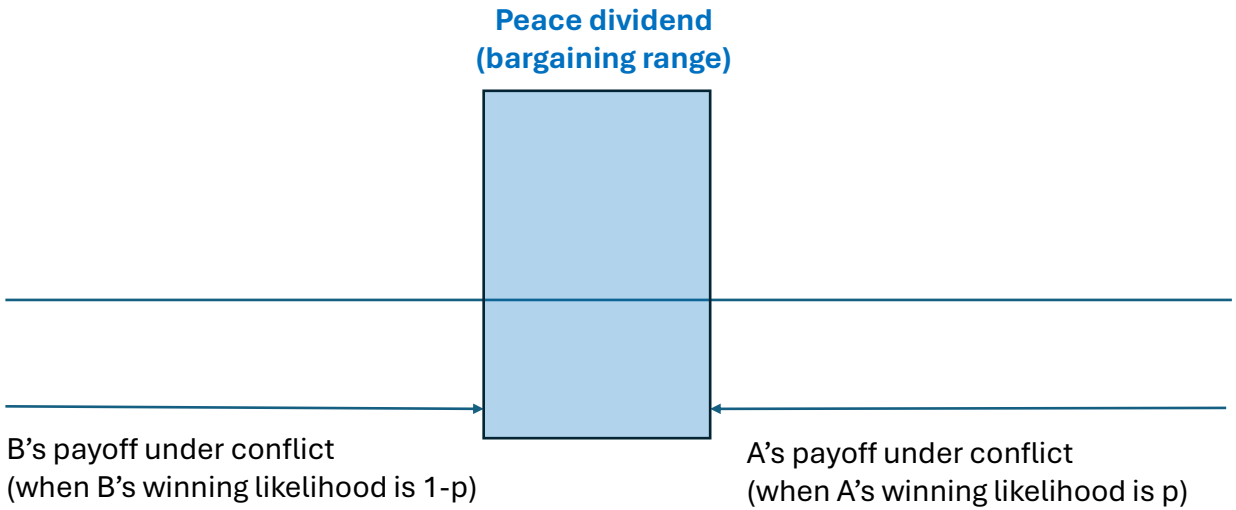
War as Bargaining Failure

Overview

- Goal of this approach is to explain why conflict takes place
  - this contrasts with the rent-seeking strand of the conflict literature that focuses on intensity, duration and winning probabilities.
- Key authors are for example James Fearon and Robert Powell.
  - Jackson and Morelli (2007) also belongs to this strand of the literature.
- Conflict is costly and one would expect bargaining over contentious issues being able to avoid war. This literature focuses on reasons for bargaining failure.
- Below is summarized the extremely simple workhorse model of Fearon (1995, IO).

War as Bargaining Failure

Overview



→ Bargaining friction such as commitment problems or asymmetric information make that the winning probabilities used in the actors' calculations may differ from p, and hence the bargaining range may disappear.

War as Bargaining Failure

Main reasons for bargaining failure 1/3

The assumptions of the toy model can be relaxed in the following way:

1. PRIVATE INFORMATION: A and B have different estimates of p. They cannot transmit their private information, as such messages may not be credible (given that p affects their bargaining power). Or transmitting proofs of military strength may reduce winning chances (secrecy is useful in fighting).

2. RISK-LOVING PLAYERS: This could explain why they prefer a costly lottery to a settlement with certainty.

War as Bargaining Failure

Main reasons for bargaining failure 2/3

- ISSUE INDIVISIBILITIES: If not all outcomes x are technically feasible due to indivisibilities, bargaining can fail.
  - Examples: Oil fields and natural resources.

- PSYCHOLOGICAL GAINS FROM WAR: Bargaining can fail when war does not entail net costs, as psychological gains outweigh the destruction and armament costs, i.e. when $c_A < 0$, $c_B < 0$.

War as Bargaining Failure

Main reasons for bargaining failure 3/3

- COMMITMENT PROBLEMS: incentives to renege on peace deals include:
  - Preemptive war and offensive advantages (FIRST STRIKE ADVANTAGE): $p_f > p > p_s$, p_f=winning probability first striker, p_s=winning probability second striker. Lack of credible commitment not to make surprise attack.
  - PREVENTIVE WAR: Say A's winning probabilities increase over time in a dynamic setting (i.e. $p_2 > p_1$) and A cannot credibly commit to not exploiting this advantage later.
  - STRATEGIC TERRITORY: Objects over which states bargain can themselves be sources of military power and there may be lack of credible commitment not to exploit this later.
- POLITICAL BIAS: Conflict leads to net costs $c_A > 0$, $c_B > 0$, but the people who decide on war are not the same who bear these costs (Jackson and Morelli, 2007)

War as Rent-seeking

Workhorse model 1/4

- Two risk-neutral players, i and j, fight to appropriate a prize **R**.
- Each faces a time constraint: $f + l = 1$, where f=fighting, l=labor.
- Payoff functions:

$$\pi_i = p_i(f_i^*, f_j^*)R + w_i(1 - f_i^*) \tag{1}$$

$$\pi_j = (1 - p_i(f_i^*, f_j^*))R + w_j(1 - f_j^*) \tag{2}$$

where

  - $*$=equilibrium level
  - p_i=probability of i winning (or alternatively, i's share won)
  - w=wage.

- Contest success function: $p_i = \frac{\rho_i f_i^*}{\rho_i f_i^* + \rho_j f_j^*}$

  where ρ=fighting technology.

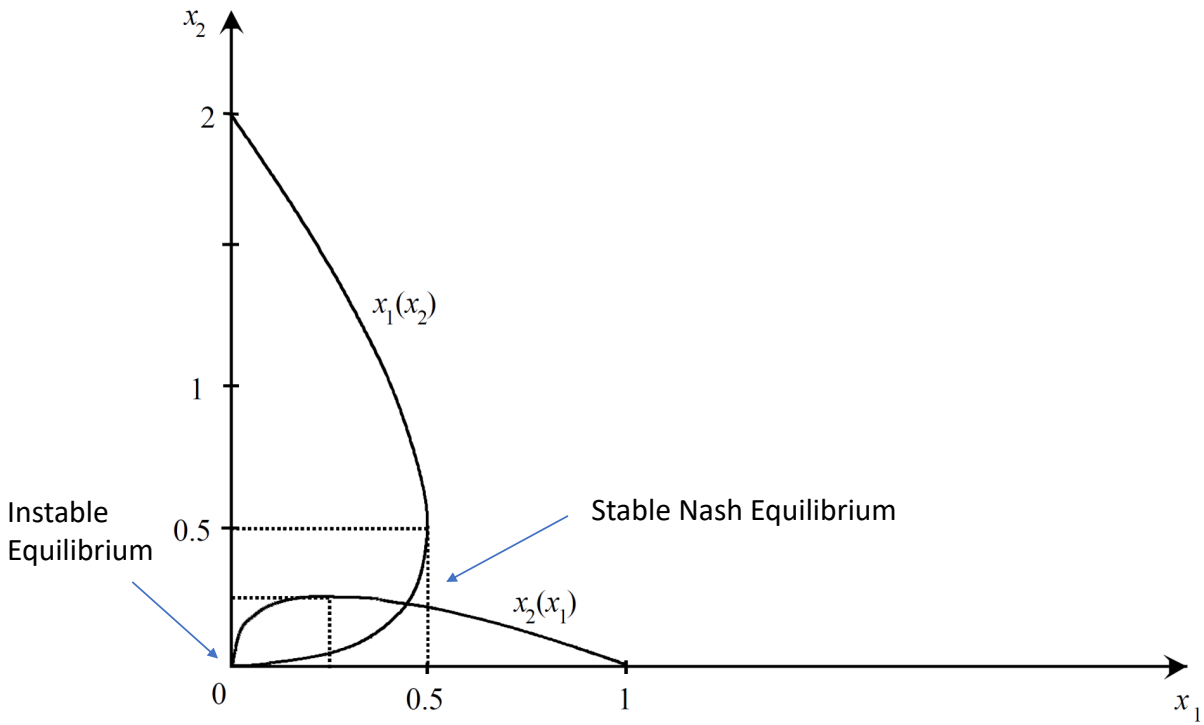
War as Rent-seeking

Workhorse model 2/4

- We can compute the first order conditions for i and j (i.e. setting the first derivative of a given player's π with respect to her f equal to 0).
- This gives two equations (reaction functions) and two unknowns (the fighting efforts).
- The intersection of the reaction functions (the best reply to the best reply) yields the Nash Equilibrium.
- Shown graphically on next page.
  - Adapted from Konrad (2007, Strategy in Contests: An Introduction). Players i and j, with fighting efforts labelled x.

War as Rent-seeking

Workhorse model 3/4



War as Rent-seeking

Workhorse model 4/4

- The Nash equilibrium appropriation levels become

$$f_i^* = \frac{\rho_i \rho_j w_j R}{(\rho_j w_i + \rho_i w_j)^2} \tag{3}$$

$$f_j^* = \frac{\rho_i \rho_j w_i R}{(\rho_j w_i + \rho_i w_j)^2} \tag{4}$$

More appropriation takes place when the prize is larger (high R) and when the opportunity costs of fighting are small (low w).

Linking Theory to Empirics

- As seen before, more appropriation takes place when the prize is larger (high R) and when the opportunity costs of fighting are small (low w). One key example of a higher R are *natural resources* or *ethnic polarization*.

- In terms of policies, we expect some big categories of empirically measurable parameters to matter heavily for promoting peace
  - Voice / Democracy (reducing the stakes of power, i.e. lower R)
  - Work / Good economic perspectives (raising the opportunity cost of fighting, i.e. higher w)
  - Warranties / Security guarantees (raises the unit cost of fighting in a model extension)

- Similar comparative statics in bargaining failure setting: Higher R may fuel political bias, higher w may boost conflict costs and enlarge bargaining space.

Empirics

Natural Resources

- Natural resource abundance is associated with armed conflict (Fearon and Laitin, 2003; Collier and Hoeffler, 2004)
- Key resources include oil (Humphreys, 2005; Ross, 2006, 2012; Dube and Vargas, 2013; Lei and Michaels, 2014), diamonds (Ross, 2006; Lujala, Gleditsch, and Gilmore, 2005), minerals (Berman et al., 2017; Rigterink et al., 2025), timber (Chimeli and Soares, 2017), and narcotics (Angrist and Kugler, 2008; Mejia and Restrepo, 2013).
- Exploiting price shocks: Dube and Vargas, 2013, ReStud; Berman et al., 2017, AER; De La Sierra et al., 2020, JPE).

Empirics

Ethnic Polarization

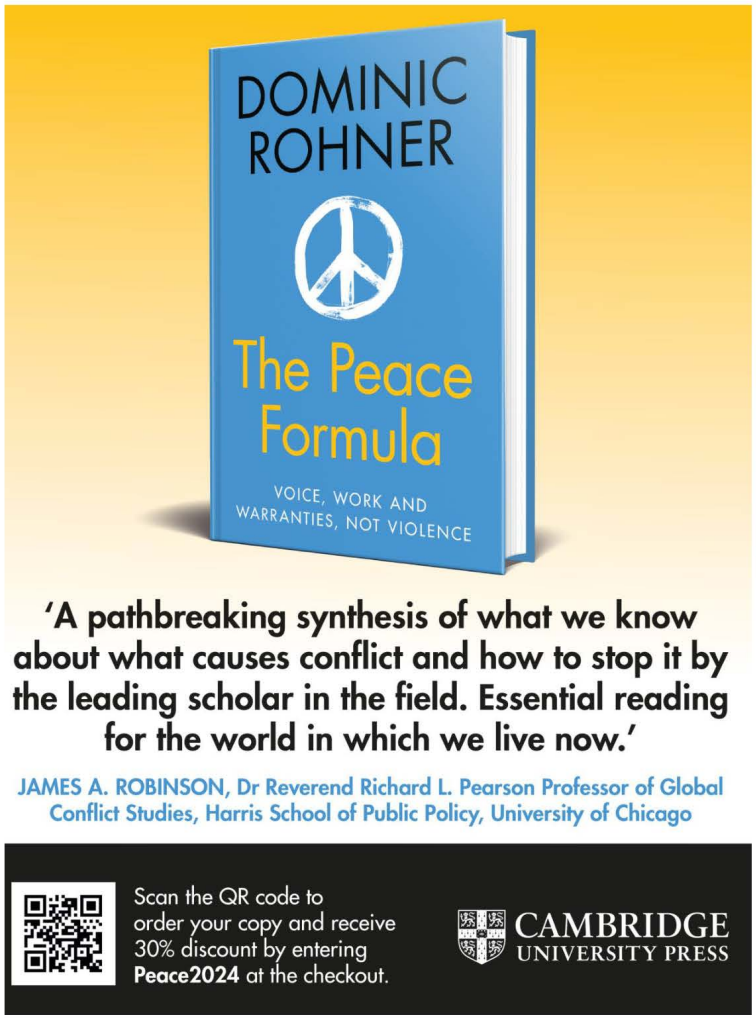
- Ethnic polarization measure micro-founded in theory work of Esteban-Ray. Association between ethnic polarization or fractionalization and armed conflict (Montalvo and Reynal- Querol, 2005; Field et al., 2008; Esteban, Mayoral, and Ray, 2012).
- Exploiting exogenous variation from resettlement programs and law change: Bazzi et al. (2019); Bazzi and Gudgeon (2021), Amodio and Chiovelli (2018)
- Also cultural distance, social norms and partitioned homelands matter: Guarnieri (2025), Moscona, Nunn, and Robinson (2020), Heldring (2021), Michalopoulos and Papaioannou (2016).

Empirics

Poverty and economic shocks

- Adverse weather shocks: Miguel, Satyanath, and Sergenti (2004); Hidalgo et al. (2010); Jia (2014); König et al. (2017); Vanden Eynde (2018); Harari and La Ferrara (2018); Waldinger (2024).
- Specific effect of climate: Hsiang, Burke, and Miguel, 2013; Burke, Hsiang, and Miguel, 2015b; Mach et al., 2019), McGuirk and Nunn, 2025; Eberle, Rohner, and Thoenig, 2025).
- Disease shocks: Cervellati, Sunde, and Valmori, 2017; Cervellati, Esposito, and Sunde, 2022).
- Commodity price shocks: McGuirk and Burke (2020)

Policies for Peace



Policies for Peace

What Type of Book Is it?

- Targeting scholars, students & popular science audience.
- Written in non-technical, accessible style
- Yet drawing on cutting-edge seminal studies, referenced in detailed appendix
- Can be ordered in all major on-site or online bookstores.

Policies for Peace

Boosting productivity and wages

Increasing productivity (higher w) raises the opportunity costs of conflict

- Health policies (Berlanda et al., 2022, "Medication against Conflict", JDE – on anti-retroviral treatment against AIDS in Africa)
- Education policies (Saia and Rohner, 2022, "Education and Conflict", working paper – on school construction program in Indonesia)
- Labor market policies (Blattman and Annan, 2016, APSR – on employment program in Liberia; Fetzer, 2020, JEEA – on workfare program in India)

Role of transfers (see e.g. Crost et al., 2014, AER, on program in Philippines; Nunn and Qian, 2014, AER, on US food aid; Premand and Rohner, AER: Insights, 2024 on program in Niger)

Policies for Peace

Democracy (I)

- Mechanisms:
  - Checks and balances reduce the "stakes" of conflict R in rent-seeking models.
  - Democracy is also a commitment device (Acemoglu and Robinson, 2001, AER) and ...
  - ... reduces asymmetric information (Laurent-Lucchetti, Rohner and Thoenig, 2024, JEEA) in bargaining settings.
  - Democratic representation could reduce "grievances" (Gurr, 1971, *Why men rebel*, Princeton University Press), but at the same time ...
  - ... it is easier to mobilize groups in a democracy (principles of free speech and right of assembly).
- Hence, net effect is likely to be ambiguous.

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Democracy (II)

- Examples of violence related to elections: Côte d'Ivoire 2010, Kenya 2007, Nigeria 2007 (cf. Collier and Vincente, 2013, EJ) etc.
- Unsurprisingly, most empirical studies find that the relationship between democracy scores and the risk of civil conflict is non-monotonic.
- There is evidence for an "inverted U-shape", i.e. "anocracies" with intermediate democracy scores fare worst (see, for example, Hegre *et al.*, 2001, APSR; Reynal-Querol, 2002, JCR; and Fearon and Laitin, 2003, APSR). $\Rightarrow$ In most full democracies people feel represented and in full autocracies people may have no chance against the regime.

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Democracy (III)

- In poor countries democracy increases the conflict risk, while decreasing it in rich countries (Collier and Rohner, 2008, JEEA).
  - Accountability effect versus regression-in-repression effect.
  - Richer countries have larger states $\Rightarrow$ accountability becomes more important.
  - Poor countries are more dependent on natural resources $\Rightarrow$ hence often rebellion is more about grabbing rents than accountability $\Rightarrow$ accountability effect is smaller.

Policies for Peace

Democracy (IV)

- Specific democratic institutions and features that lower the stakes of controlling the government can reduce the risk of conflict.
- *Proportional representation* decreases the risk of civil conflict (Reynal-Querol, 2002, JCR) $\Rightarrow$ Even if a group loses the election, it is still represented.
- *Political inclusion for minority groups* in government and administration reduces conflict risk (Cederman and Girardin, 2007, APSR; Cederman et al., 2010, WP) $\Rightarrow$ Minorities included in the government coalition can peacefully represent their interests.
  - Example: Power-sharing in Northern Ireland (Mueller and Rohner, 2018, EP).

Policies for Peace

Democracy (V)

- *Federalism / Territorial autonomy* decreases the risk of rebellion (Saideman et al, 2002, CPS; Cederman et al., 2015, APSR) $\Rightarrow$ More regional autonomy makes it less crucial to control the central government.

- *Rule of Law* (in particular, executive constraints, contract protection, freedom from expropriation and reliable bureaucracy) reduce the conflict risk (Easterly, 2001, EDCC; Besley and Persson, 2011, QJE) $\Rightarrow$ Protects minorities who can defend their interests by peaceful means.

- *Enfranchisement* Representation reduces riots and political violence (Saia and Rohner, 2022, "Ballot or Bullet", working paper – on the impact of the UK's Second Reform Act of 1867)

Policies for Peace

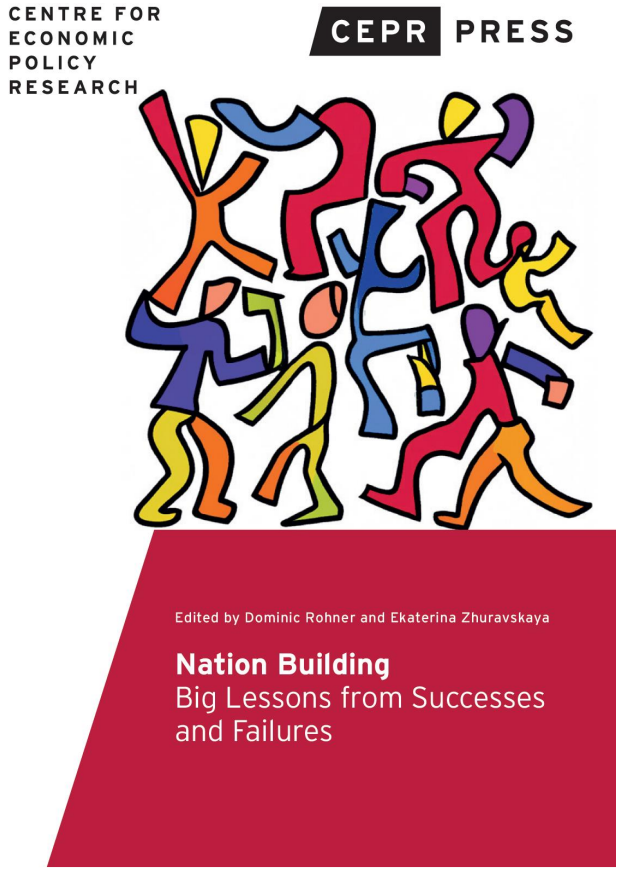
State capacity and security guarantees

- Security first (Berman et al. papers)
- (US) military aid backfires (Krieger et al., EJ, 2024); same for Colombia (Dube and Naidu, JOP, 2015)
- Yet UN blue helmets make a big positive difference (see work of Lisa Hultman and others)
- Understanding origins and impact of state capacity (Besley and Persson papers and book)

Policies for Peace

State capacity and security guarantees

- Role external threats (Gehring, 2022, EJ)
- Nation-Building (Rohner and Zhuravskaya (eds)., 2023, CEPR)
- New Deal (Caprettini and Voth, 2023, QJE)



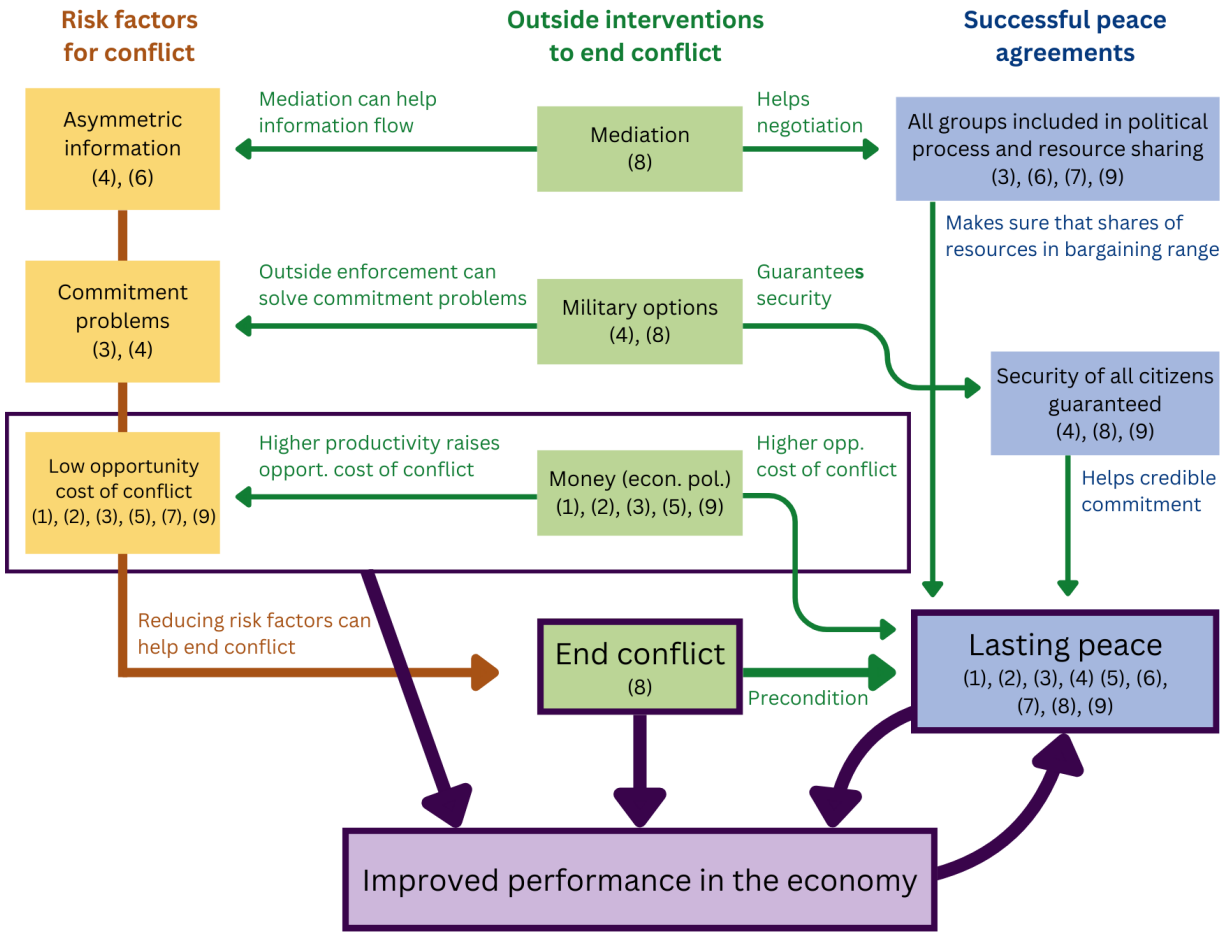
Policies for Peace

- A related angle is to think about what can be done from the outside to help.

- Rohner, Dominic, "Mediation, Military and Money: The Promises and Pitfalls of Outside Interventions to End Armed Conflicts", *Journal of Economic Literature*, 2024.
  - Mediation: Good theoretical reasons to think it helps (i.e. information spread, extend bargaining space) yet virtually no causal evidence.
  - Military: Military aid often backfires (Dube and Naidu, 2015, JOP; Dimant, Krieger and Meierrieks, 2020, working paper), yet UN peacekeeping shown to reduce violence (see various articles of Lisa Hultman and co-authors)
  - Money: Next slides focus on policies that foster economic productivity.

Policies for Peace

Overview graph (numbers correspond to ReCIPE themes)



Policies for Peace

A role for all of us?

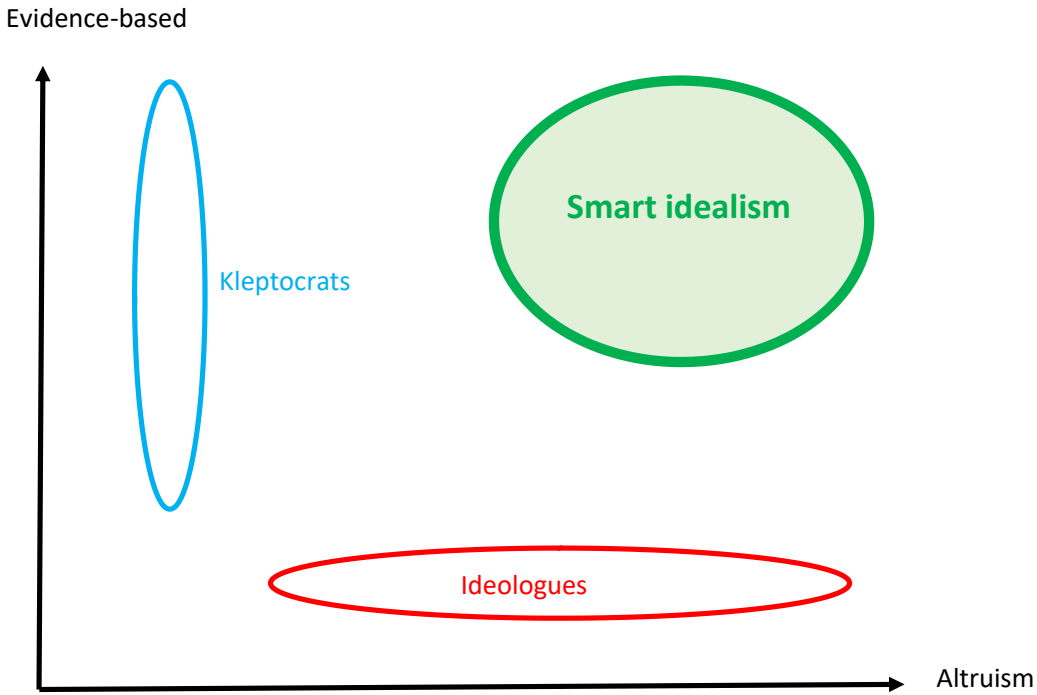
Ask not what your country can do for you – ask what you can do for your country.

JFK, 1961

JFK (© Stoughton)

Policies for Peace

The scope for *Smart idealism*



Conclusion

Key take-home policy messages (I)

- Green energy transition is key – not only to save the planet but also to reduce the scope for war (remember, oil and minerals key determinants of conflict)
- Promote democracy worldwide – having more democracies reduces the risks of civil and international wars alike
- Better to invest in human capital accumulation (through education and health policies) than lump sum cash / goods distribution (human capital not appropriable like physical capital)

Conclusion

Key take-home policy messages (II)

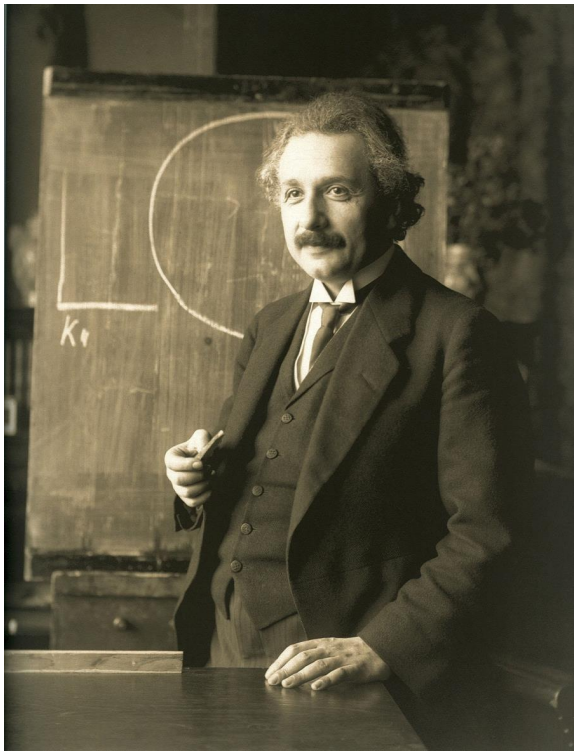
- Mediation may work, but key to build democratic institutions and to have UN peacekeepers guaranteeing security during transition
- Trade often a force of good, with the exception of trade in fossil fuels and minerals with non-democratic regimes
- Role for building trust and fostering reconciliation

Conclusion

High stakes …

I do not know with what weapons World War III will be fought, but World War IV will be fought with sticks and stones.

Albert Einstein



Albert Einstein (© Public domain)